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a portion of the active region in the cell region of the semiconductor substrate protruding above the upper surface of the isolation region in the cell region of the semiconductor substrate to define a cell region active channel.

15. The semiconductor device as claimed in claim 1, wherein a first portion of the at least two protruding active channels are cell region active channels formed in the cell region of the semiconductor substrate and a second portion of the at least two protruding active channels are peripheral circuit region active channels formed in the peripheral circuit region of the semiconductor substrate.

16. The semiconductor device as claimed in claim 1, further comprising:

a portion of the active region in the cell region of the semiconductor substrate protruding above the upper surface of the isolation region in the cell region of the semiconductor substrate to define a cell region active channel.

17. The semiconductor device as claimed in claim 1, wherein the at least two protruding active channels are cell region active channels formed in the cell region of the semiconductor substrate and further comprising a portion of the active region in the peripheral portion of the semiconductor substrate protruding above the upper surface of the isolation region in the peripheral circuit region of the semiconductor substrate to define a plurality of peripheral circuit region active channels formed in the peripheral circuit region of the semiconductor substrate.

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18. The semiconductor device as claimed in claim 17, wherein at least two of the plurality of peripheral circuit region active channels that protrude above the upper surface of the isolation region in the peripheral circuit region of the semiconductor substrate are adjacent to the isolation region.

19. The semiconductor device as claimed in claim 17, wherein the plurality of peripheral circuit region active channels that protrude above the upper surface of the isolation region in the peripheral circuit region of the semiconductor substrate are separated from the isolation region by a predetermined distance.

20. The semiconductor device as claimed in claim 1, wherein the isolation region surrounds lateral sides of the active region, the lateral sides of the active region extending along a direction substantially perpendicular to a plane along which the semiconductor substrate extends.

21. The semiconductor device as claimed in claim 1, wherein:

the given pair is a given first pair; and

the gate electrode at least partially fills an opening located between a given second pair of the at least two protruding active channels,

the opening differing significantly in lateral size relative to the trench, and the opening laterally overlapping the isolation region.

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